Field Service Bulletin

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Date: April 2011

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- [ ] C3
- [ ] i3
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- [x] NGO/SOTA
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REFERENCE:

Inspecting and replacing the stirrer shaft and hub in i1 (Sota and NGO) model ovens.

TYPE OF ACTION REQUIRED: *REACTIVE*

Perform the actions outlined in this bulletin when inspecting or replacing a stirrer shaft or hub.

DISTRIBUTION:

Field support personnel.

APPLICATION:

Serial breaks are provided below. This bulletin applies to i1 ovens with serial numbers lower than:

- NGOD01930
- NGOEWD00542
- NGOEDD00018
- NGOUKD00072
- NGOJDD00022
- NGOBKD00209
- NGOKWD00006
- NGOLAD000129
- NGOAUD00024

PROBLEM:

1. Premature failure in microwave circuit components such as magnetrons and/or transformers.
2. Ovens making squeaking noise.

SOLUTION:

Inspect the condition of the stirrer shaft. Replace if the shaft shows signs of severe arcing or pitting.

PARTS REQUIRED:

- i1-3214: Service Kit, Stirrer Assembly, i1
- i1-3212: Service Kit, Stirrer Blade, i1 (if required)
- NGC-3015: Service Kit, Magnetron (if requried)

TOOLS REQUIRED:

- #2 Phillips screwdriver
- T-15 Torx security screwdriver
- 3/8” and 11/32” Nut driver
- Amp meter for measuring magnetron power output

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Action Required #1: Inspect and Replace Defective Components

1. Allow the oven to cool until the display no longer reads "cooling down."

⚠ WARNING: The oven is hot and may cause burns if not given time to cool down.

2. Disconnect power from the oven.
3. Remove the upper jetplate:
   a. Support the jetplate in one hand.
   b. Remove the jetplate tabs or brackets with the other hand.

⚠ CAUTION: The top jetplate is fragile; handle with care.

4. Remove the stirrer blade. It is secured to the shaft via one Phillips head screw (Figure 1).

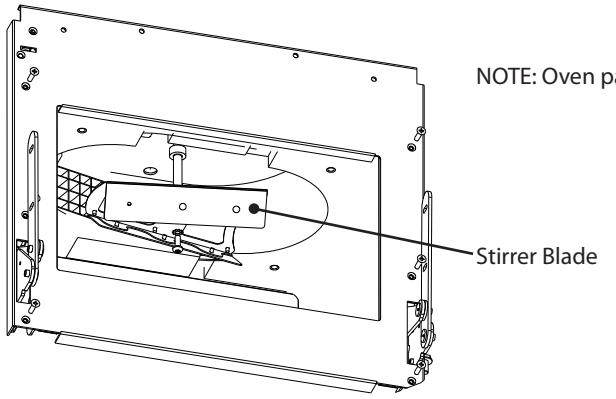

Figure 1: i1 (NGO/Sota) Stirrer Blade

5. Remove the stirrer motor shaft and assembly:
   a. Remove the outer shell of the oven.
   b. Loosen the stirrer hub bracket (located between the EMI filter and power supply; Figure 2). It is secured by three 3/8" hex nuts.
   c. Remove the stirrer shaft and stirrer hub bracket. The shaft is secured by four 11/32" hex nuts.

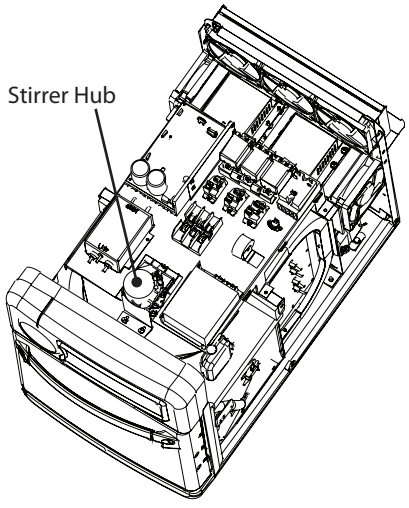

Figure 2: i1 Stirrer Hub Location

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6. Check the shaft for severe arcing.
    a. If arcing is present, inspect the magnetrons for discoloration on the ceramic portion or arcing on the antenna (Figure 3).
    b. Replace the magnetron if discoloration or arcing is present.

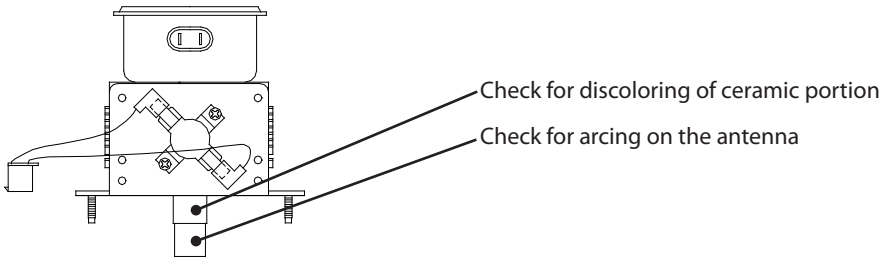

Figure 3: Magnetron

7. Install the new stirrer assembly service kit (i1-3214).
8. Inspect the stirrer blade. If it has visible signs of arcing, replace it with i1-3212.
9. Reconnect power to the oven.
10. Enter the Test Mode:
    a. From the Off screen, press the "i" key. This will bring up "Info Mode."
    b. Press the Down arrow to view screen 2 of the Info Mode.
    c. Select "Test Mode."
    d. Enter the password 9 4 2 8 and press the Enter key.
11. Test magnetron operation:
    a. Press and hold the top-left soft key (MAG OFF/ON).
    b. Measure the current transformer wire on the control board and verify the following amperage is present: 13-15A (240 V) / 15-17A (208 V).
    c. If further troubleshooting is required, reference the service manual.
12. While in Test Mode, confirm the stirrer is rotating properly:
    a. Press the top-right soft key (STIRRER OFF/ON).
    b. With the oven door open, verify the stirrer is turning freely and not squeaking. Adjust as necessary.
    c. If further troubleshooting is required, reference the service manual.
13. Reinstall the upper jetplate.
14. Reinstall the outer shell.
15. If one or both magnetrons were replaced, perform a microwave leakage test (see next page).

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Action Required #2: Measure RF Leakage for Microwave Safety

⚠ WARNING: This procedure requires work with hot surfaces and water loads. To avoid burns, be careful when testing.

An RF (microwave) leakage test must be performed at the conclusion of these service tasks:

- Door removal, replacement and/or adjustment
- Waveguide removal and/or replacement
- Magnetron removal and/or replacement
- Door switch adjustment and/or replacement

⚠ WARNING: If the unit fails the microwave leakage test (leakage greater than 5mW/cm^2), the oven must be taken out of service immediately until the defect is corrected. In addition, the CDRH Regulation 21 Subpart C, 1002.20 requires that leakage readings of over 5mW/cm^2 must be reported to the manufacturer.

To measure RF leakage,

1. Turn the oven on and allow it to warm up to the set temperature (approximately 15 minutes if the oven starts cold).
2. Once the oven has warmed up, turn it off and place it in Test Mode (see page 3, step 10). From Test Mode, select Manufacturing Mode.
3. From the Manufacturing Mode screen, select “MW Leak Test” and follow the instructions on the screen (also detailed in the following steps).
4. Place a water load into the cook cavity. The water load must conform to the following specifications:
   - Volume: 275 ml ± 15 ml
   - Temperature: 68°F ± 9°F (20°C ± 5°C)
   - Vessel: Low form, 600 ml beaker with an inside diameter of approximately 3.35” (85 mm) and made of Pyrex or equivalent.
5. Close the oven door and press the Enter key. The microwave system will turn on.
6. Measure microwave emission around the door as shown in Figure 4), moving the meter sensor at 0.5 inches (13 mm)/second.

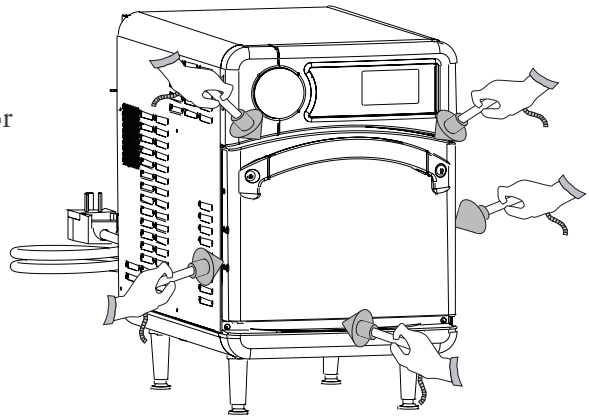

Figure 4: Sota/NGO Survey Meter Placement

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7. As microwave leakage is observed while moving the sensor, note any meter spike areas that come close to 5mW/cm^2 for later re-measurement.
8. Replace the water load every 60 seconds until the test is completed, and also after scanning the door.
9. Close the oven door and return the meter probe to any "spike" areas. Allow the probe to remain in the "spike" area for 17 seconds. Note the highest reading obtained.

NOTE: There may be several places on the door where this procedure needs to be done. If so, start out with a fresh water load each time a new area is measured, or if measurement of an area takes longer than 60 seconds.

10. After each test is complete, open the oven door and dispose of the hot water.
11. If any readings are greater than 5mW/cm^2, take the oven out of service until the defect is corrected. Report any readings greater than 5mW/cm^2 to the manufacturer, in accordance with CDRH Regulation 21 Subpart C, 1002.20.

End of Procedure.

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